

TECHNICAL INFORMATION AND SERVICE DATA

RADIOLETTE

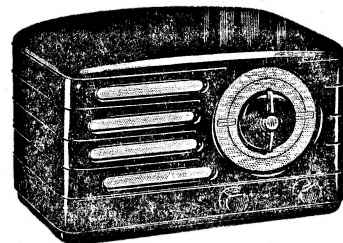
Models 514-M, 514-MZ

**FOUR VALVE, BROADCAST, VIBRATOR
OPERATED SUPERHETERODYNES**

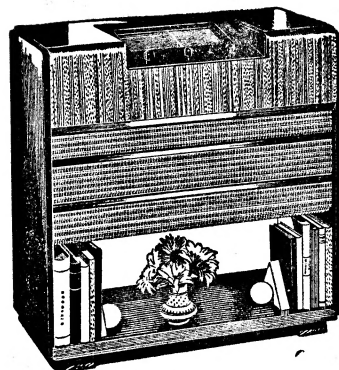
RADIOLA Model 718-C

**FOUR VALVE, BROADCAST, BATTERY/VIBRATOR
OPERATED SUPERHETERODYNE**

**ISSUED BY
AMALGAMATED WIRELESS (A/SIA.) LTD.**



514-M and 514-MZ



718-C

ELECTRICAL SPECIFICATIONS.

FREQUENCY RANGE.....540-1600 Kc/s (555-187.5 M)

INTERMEDIATE FREQUENCY 455 Kc/s

BATTERY COMPLEMENT:

Model 514-M, 514-MZ—1—4 volt accumulator

Model 718-C—Battery operation

	Cable with tips	Cable with plugs
(1) 1—4 volt accumulator 2—45 volt "B" batteries }	19183	19803
(2) 1—1.5 volt dry cell "A" battery 2—45 volt "B" batteries }	19182	19801

NOTE: If a 1.5 volt dry cell "A" battery is used, it is necessary, if dial illumination is required, to remove the dial lamp cables from the terminals on top of the chassis and to connect the cable to the outer terminals of a 4.5 volt battery—see diagram "Battery Connections."

Vibrator Power Unit Operation: 1 4 volt accumulator.

Vibrator Power Unit:

Models 514-M, 514-MZ 20420

Model 718-C 19190

Battery Consumption.

Models 514-M, 514-MZ. 4 volt accumulator 0.8 amp.

Model 718-C 4 volt "A" battery 0.15 amp.
1.5 volt "A" battery 0.25 amp.
"B" battery 14 mA
Vibrator operation 0.9 amp.

Dial Lamps.

Models 514-M, 514-MZ 6.0 volt, 0.15 amp. M.E.S.

Model 718-C 6.3 volt, 0.25 amp. M.E.S.

Fuse.

Battery operation (718-C only) $\frac{1}{4}$ amp.

Vibrator operation 3 amp.

Valve Complement.

- (1) 1R5 Converter
- (2) 1T4 I.F. Amplifier
- (3) 1S5 Detector, A.F. Amplifier, A.V.C.
- (4) 3V4 Output

Vibrator Cartridge.

Models 514-M, 514-MZ: A.W.A. Oak type V 5278

Model 718-C: A.W.A. Oak type V 6804

Loudspeaker (Permanent Magnet).

Model 514-M

5 inch—code number AC32

Transformer—XA8

V.C. Impedance—3 ohms at 400 C.P.S.

Model 514-MZ

5 inch—code number AC39

Transformer—XA8

V.C. Impedance—3 ohms at 400 C.P.S.

Model 718-C

7 inch—code number AY40

Transformer—XA8

V.C. Impedance—3 ohms at 400 C.P.S.

Undistorted Power Output, 200 milliwatts.

Controls.

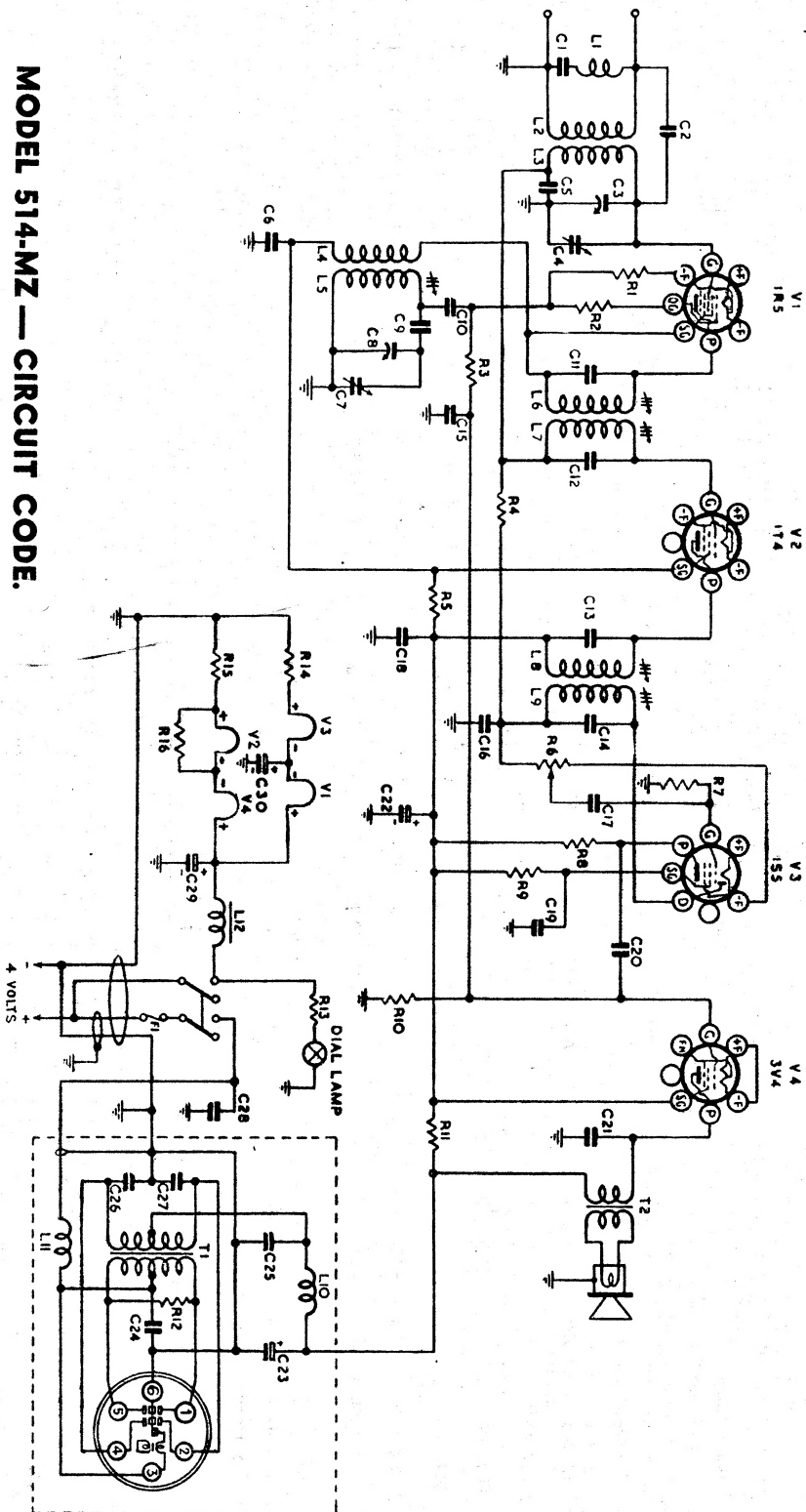
Models 514-M, 514-MZ—Combined On/Off switch and Volume—Left hand control. Tuning—Right-hand control.

Model 718-C. Combined On/Off switch and Tone—Left-hand control.

Volume—Centre control.

Tuning—Right-hand control.

MODEL 514-MZ — CIRCUIT CODE.



INDUCTORS

Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.	Description	Part No.
L1	Filter Unit	9382	R8	1 megohm ½ watt	C8	C24	0.4 uF paper 200 V	
L2, L3	Aerial Coil	7647A	R9	3.2 megohms 1 watt	C9	C25	working	
L4, L5	1600-540 Kc/s	7638	R10	1.0 megohms ½ watt	C10	C26	0.1 uF paper 200 V	
L6, L7	Oscillator Coil	22700	R11	1000 ohms ½ watt	C11	C27	0.02 uF paper 600 V	
L8, L9	1st I.F. Transformer	22703	R12	500 ohms ½ watt	C12	C28	working	
L10	2nd I.F. Transformer	13809	R13	Not used	C13	C29	400 uF 12 P.V. Electrolytic	
L11	R.F. Choke	3149	R14	25 ohms 1 watt	C14	C30	working	
L12	R.F. Choke	19155	R15	12 ohms 1 watt	C15			
	Low Tension Filter Choke		R16	22 ohms 1 watt	C16			
RESISTORS.								
R1	0.1 megohm ½ watt	C1	CAPACITORS.					
R2	2000 ohms ½ watt	C2	C1	50 uF mica	C17	TRANSFORMERS.		
R3	3.2 megohms 1 watt	C3	C2	4 uF mica	C18	C29	400 uF 12 P.V. Electrolytic	
R4	1.6 megohms ½ watt	C4	C3	12-430 uF tuning (on gang)	C19	C30	working	
R5	10,000 ohms ½ watt	C5	C4	3-25 uF trimmer (on gang)	C20			
R6	0.5 megohm Volume Control (with switch)	C6	C5	0.05 uF paper 200 V	C21			
R7	10 megohms 1 watt	C7	C6	0.05 uF paper 200 V	C22			
			C7	3-25 uF trimmer (on gang)	C23			

*In some receivers R5 may be 15,000 ohms ½ watt

LOUDSPEAKER.

5 inch permanent magnet

Vibrator Transformer

Loudspeaker Transformer

400 uF 12 P.V. Electrolytic

working

0.4 uF paper 200 V

working

0.02 uF paper 600 V

working

0.4 uF paper 200 V

working

400 uF 12 P.V. Electrolytic

working

0.4 uF paper 200 V

working

0.02 uF paper 600 V

working

0.4 uF paper 200 V

working

400 uF 12 P.V. Electrolytic

working

0.4 uF paper 200 V

working

0.02 uF paper 600 V

working

0.4 uF paper 200 V

working

400 uF 12 P.V. Electrolytic

working

0.4 uF paper 200 V

working

0.02 uF paper 600 V

working

0.4 uF paper 200 V

working

400 uF 12 P.V. Electrolytic

working

0.4 uF paper 200 V

working

0.02 uF paper 600 V

working

0.4 uF paper 200 V

working

400 uF 12 P.V. Electrolytic

working

0.4 uF paper 200 V

working

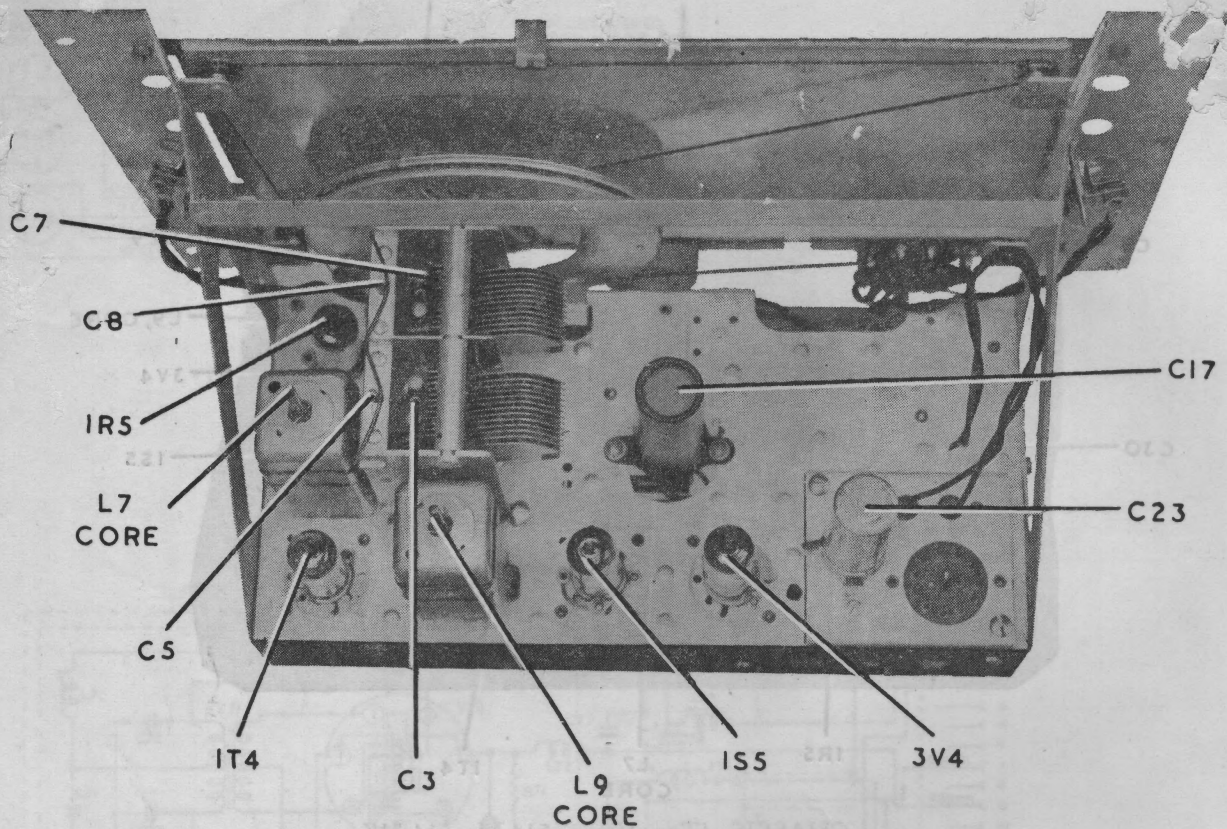
0.02 uF paper 600 V

working

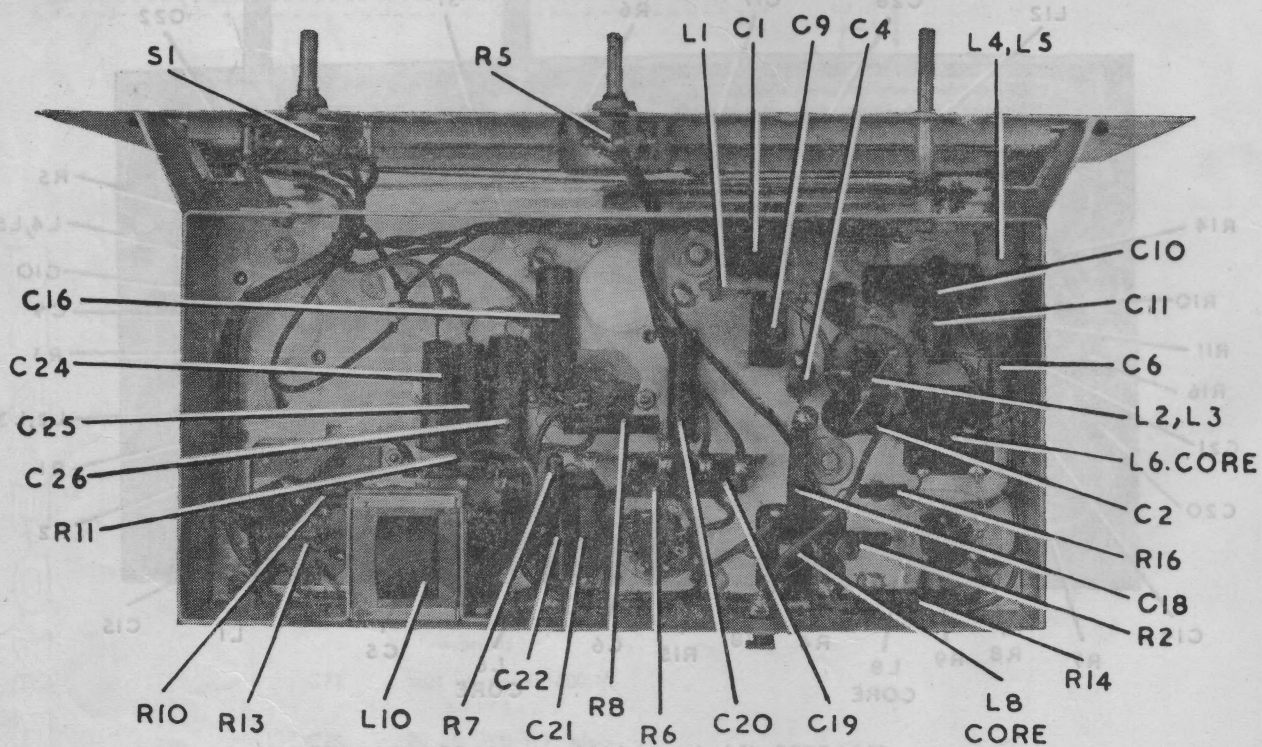
0.4 uF paper 200 V

working

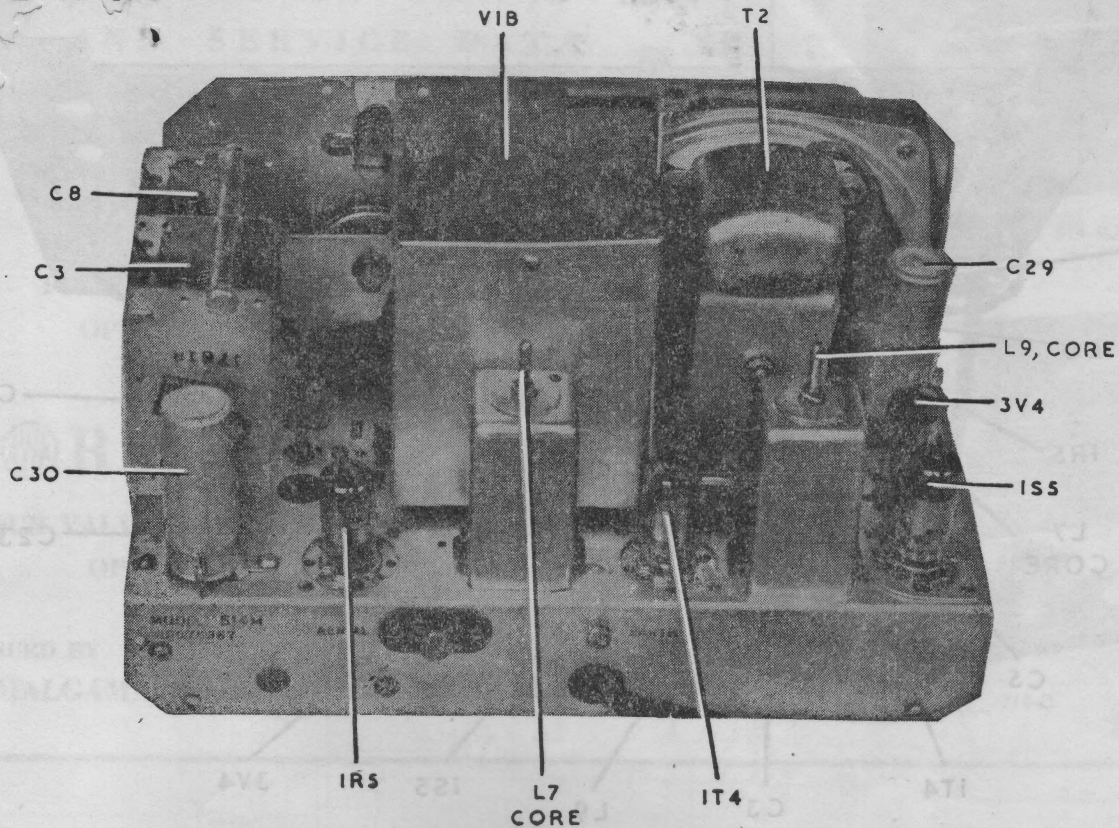
400 uF 12 P.V. Electrolytic



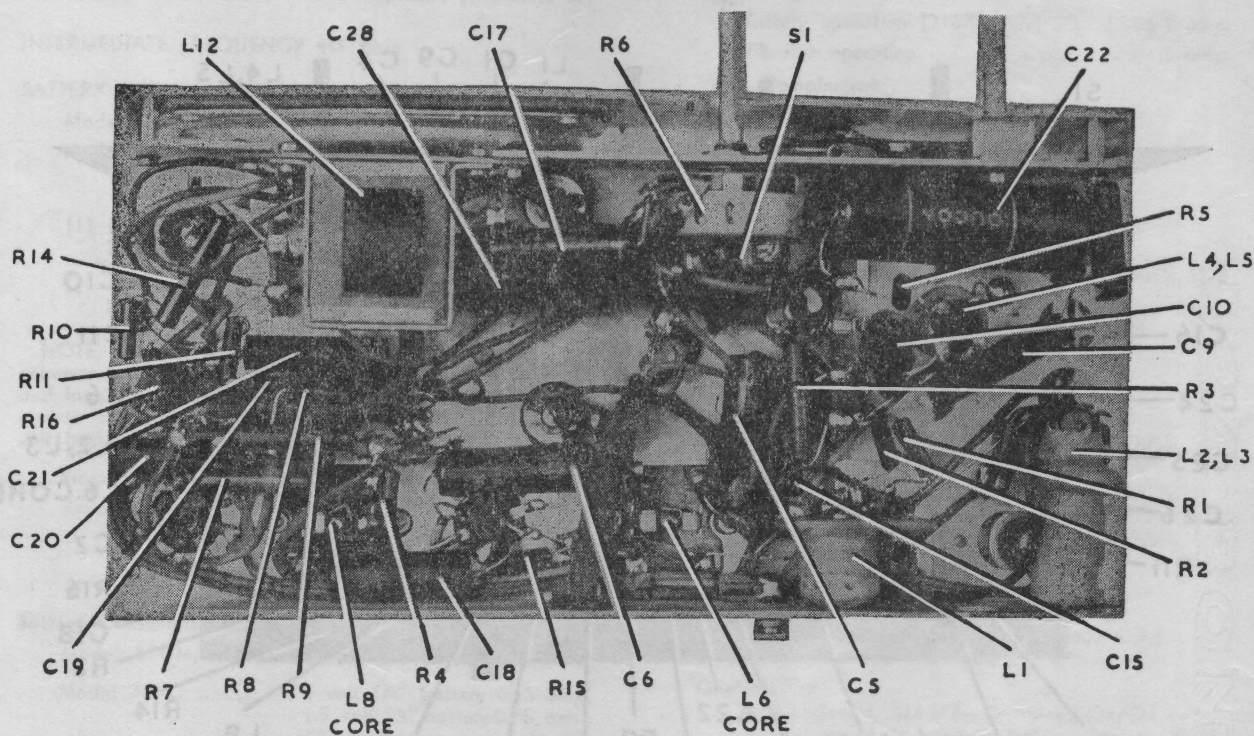
CHASSIS (Top View) 718-C



CHASSIS (Underneath View) 718-C



CHASSIS (Top View) 514-M, 514-MZ



CHASSIS (Underneath View) 514-M, 514-MZ

MECHANICAL SPECIFICATIONS.

Cabinet Dimensions (inches)	Height	Width	Depth	Weight (nett lbs.)
514-M, 514-MZ	7 $\frac{3}{8}$	11 $\frac{1}{4}$	5 $\frac{3}{4}$	514-M, 514-MZ 13 lbs.
718-C				718-C 48 lbs.
Chassis Base Dimensions (ins.)	2	10 $\frac{1}{2}$	5 $\frac{1}{2}$	Cabinet Finish
Overall Chassis Height (ins.)	6 $\frac{1}{4}$			514-M, 514-MZ Moulded Ivory, Jade, Walnut
				718-C Walnut veneer

ALIGNMENT PROCEDURE.

Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using specialised equipment.

For all alignment operations connect the "low" side of the signal generator to the receiver chassis, and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments.

- (1) A.W.A. Junior Signal Generator, type 2R3911.
- (2) A.W.A. Modulated Oscillator, type J6726.
If the modulated oscillator is used, connect an 0.25 megohm non-inductive resistor across the output terminals.
- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE.

Order	Connect "high" side of generator to:	Tune Generator to:	Set Receiver Dial to:	Adjust for maximum peak output
1	Aerial Section of Gang. (Rear portion.)	455 Kc/s	540 Kc/s	L9 Core
2	Aerial Section of Gang. (Rear portion.)	455 Kc/s	540 Kc/s	L8 Core
3	Aerial Section of Gang. (Rear portion.)	455 Kc/s	540 Kc/s	L7 Core
4	Aerial Section of Gang. (Rear portion.)	455 Kc/s	540 Kc/s	L6 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc/s	600 Kc/s	L.F. Osc. Core Adj. (L5)*
6	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj.†
7	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Aer. Adj.‡

*Rock the tuning control back and forth through the signal.

†C7 in models 514-M, 514-MZ; C8 in model 718-C.

‡C4 in models 514-M, 514-MZ; C5 in model 718-C.

Loudspeaker Service.

It is inadvisable to attempt loudspeaker repairs other than replacement of the transformer. The fitting of a new cone should be done only by Service Departments suitably equipped to do the work.

Chassis Removal.

Models 514-M, 514-MZ. First remove the control knobs and felt washers—each knob is held by a set screw. Then remove two screws from underneath the cabinet and withdraw the chassis.

Model 718-C. (1) Remove the knobs and felt washers. The knobs are each held by a set screw.

(2) Disconnect the loudspeaker and vibrator cables.

(3) The chassis is held in the cabinet by four winged nuts, two at each end of the dial frame assembly. Removal of these enables the chassis to be withdrawn from the cabinet.

Dial Pointer Adjustment.

Models 514-M, 514-MZ. Should the pointer become displaced it can be reset as follows:—

Tune a known station by ear and note any inaccuracy of the pointer. If it is necessary to turn the pointer slightly clockwise, turn the tuning control fully clockwise and then turn the pointer sufficiently to correct the error.

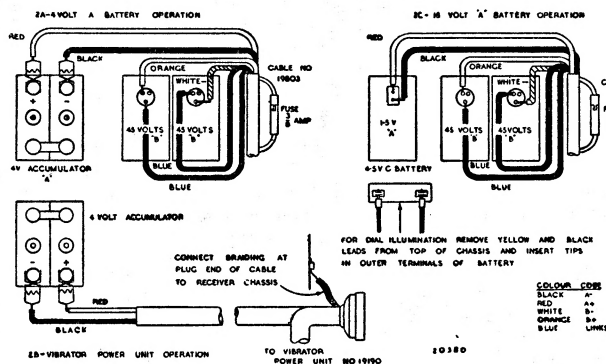
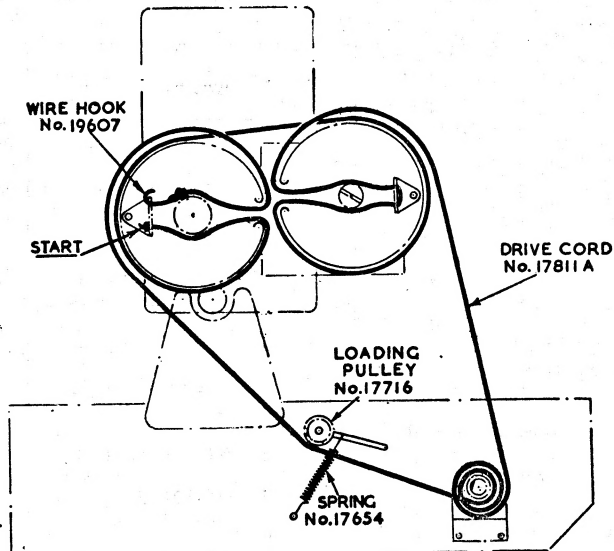
If it is necessary to turn the pointer slightly anti-clockwise, turn the tuning control fully anti-clockwise and then turn the pointer to correct the error.

Model 718-C. The dial pointer is held in position on the drive cord by two rubber-lined clips. To alter the position of the pointer, loosen the holding clips slightly and move the pointer in the required direction. It is important to re-clip the clips after any adjustment of the pointer.

Tuning Drive Cord Replacement.

Models 514-M, 514-MZ. Disconnect the spring from the loading pulley. The accompanying diagram shows the route of the cord and the method of attachment. The cord is made from a 27½ inch cut length, which allows for the knot at each end. When fitting, apply tension to the cord during the operation and use a pair of round-nose pliers to bend the hook round the anchor plate to take up any slack. Place the loading pulley on the drive cord and replace the spring.

Model 718-C. Follow the diagram which is affixed to the back of the dial frame assembly. This shows the route of the cord and the method of attachment.



Battery Connections. Model 718-C

SOCKET VOLTAGES. MODELS 514-M, 514-MZ.

Valve	Bias Volts	Screen Grid to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Filament Volts
IR5 Converter	0	45*	45*	0.5	1.3-1.4
IT4 I.F. Amplifier	0	45*	85	2.7	1.3-1.4
IS5 Det., A.V.C., A.F. Amp.	0	25†	20†	0.07	1.3-1.4
3V4 Output	-6.5†	85	90	8.5	1.3-1.4

Total Battery Current—0.8 amp.

Measured with no signal input. Volume Control maximum clockwise.

*These readings may vary depending on the resistance of the voltmeter used.

†Cannot be measured with an ordinary voltmeter.

SOCKET VOLTAGES. MODEL 718-C.

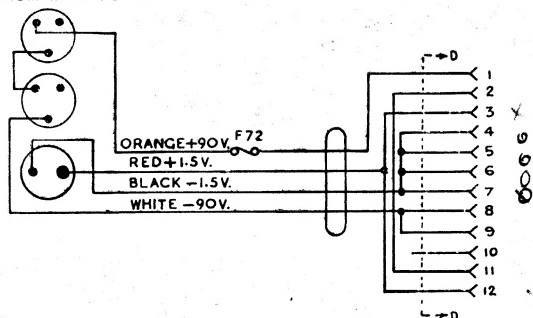
Valve	Bias Volts		Screen Grid to Chassis Volts		Anode to Chassis Volts		Anode Current mA		Filament Volts
	B	V	B	V	B	V	B	V	
IR5 Converter	0	0	45*	45*	45*	45*	0.75	0.75	1.3-1.4
IT4 I.F. Amp.	0	0	45*	45*	84	85	2.5	2.7	1.3-1.4
IS5 Det., A.V.C., A.F. Amp.	0	0	25+	25+	20+	20+	0.07	0.07	1.3-1.4
3V4 Output	-5.5	-5	84	85	80	80	8.5	9.5	1.3-1.4

Measured with no signal input. Volume Control maximum clockwise.

*These readings may vary, depending on the resistance of the voltmeter used.

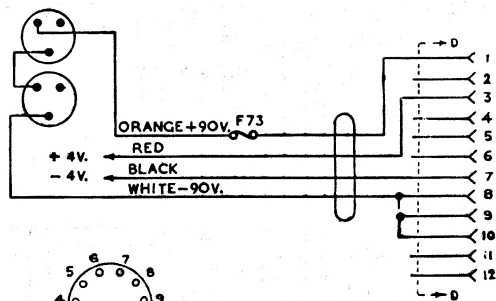
+Cannot be measured with an ordinary voltmeter.

PLUGS VIEWED
FROM WIRING SIDE.

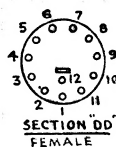


BATTERY CABLE
No. 19801

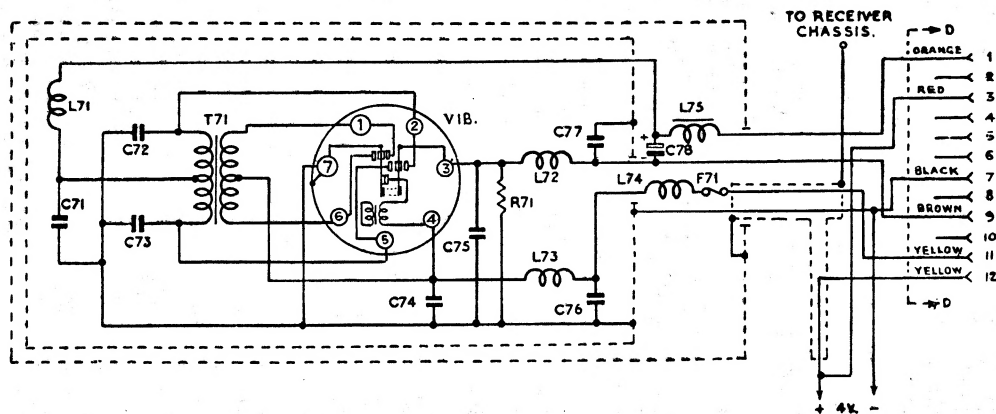
PLUGS VIEWED
FROM WIRING SIDE



BATTERY CABLE
No. 19803



VIBRATOR POWER UNIT No. 19190



L71	R.F. choke	13809
L72	R.F. choke	13809
L73	R.F. choke	3149
L74	R.F. choke	3149
L75	R.F. choke	8321
R71	150 ohms, 1 watt, W.W.	
C71	0.01 uF paper, 600 V. working	
C72	0.02 uF paper, 600 V. working	
C73	0.02 uF paper, 600 V. working	
C74	0.1 uF paper, 400 V. working	
C75	0.01 uF paper, 600 V. working	
C76	0.1 uF paper, 400 V. working	
C77	0.01 uF paper, 600 V. working	
C78	20 uF, 200 P.V. elec- trolytic	
T71	Vibrator transformer	17568

D.C. RESISTANCE OF WINDINGS.

Winding	D.C. Resistance in Ohms
Aerial Coil	
Primary (L2)	9.5
Secondary (L3)	3.5
Oscillator Coil	
Primary (L4)	2
Secondary (L5)	6.5
I.F. Transformer Windings	8
I.F. Filter (L1)	17+
LT Choke	
514-M, 514-MZ (L12)	*
718-C (L10)	*
Smoothing Choke	
718-C only (L75)	200
R.F. Filter Choke	
514-M, 514-MZ (L10)	9
(L11)	*
718-C (L71, L72)	9
(L73, L74)	*
Loudspeaker Input Transformer.	
XA8 Primary	425 or 510
Secondary	*
Vibrator Transformer	
514-M, 514-MZ Primary	*
Secondary	500
718-C Primary	*
Secondary	300

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

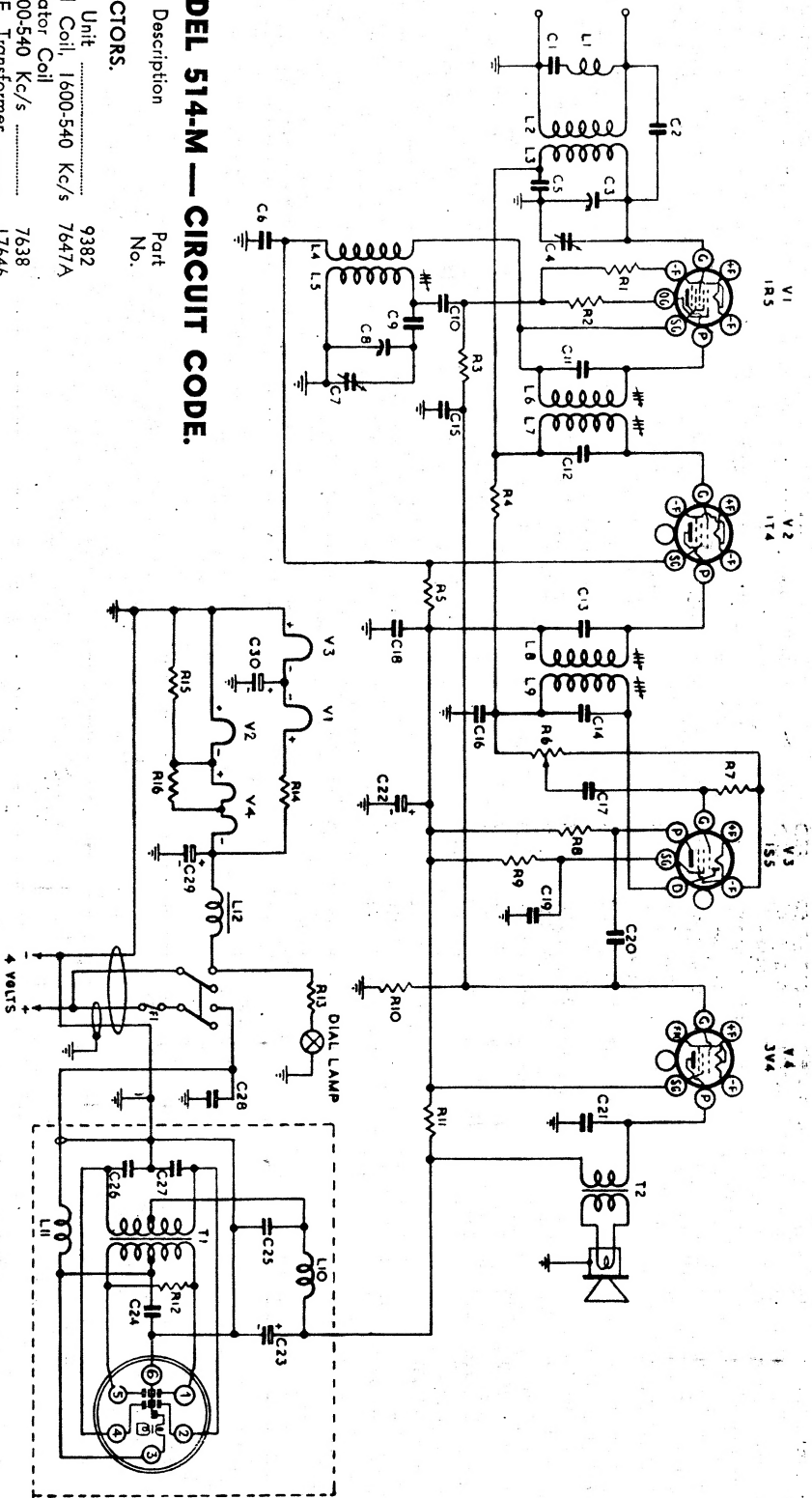
*Less than 1 ohm.

+In some receivers this reading may be as high as 60 ohms.

MECHANICAL REPLACEMENT PARTS.

Item	Part No.	Item	Part No.
Cabinet 514-M, 514-MZ	19680	Drive Drum Assembly (718-C only)	22542
718-C	D4	Dial Pointer (514-M, 514-MZ only)	19514
Cable, Battery 514-M, 514-MZ	17644	Knob 514-M, 514-MZ	17603
With Tips	19183	718-C	4589
With Plugs	19803	Socket Valve	19965
718-C 4 volt	19182	Spindle, tuning drive assembly	
1.5 volt	19801	514-M, 514-MZ	17647
Cable, Loudspeaker (718-C only)	22897	718-C	22388
Cable, volume control		Strip tag	
(514-M, 514-MZ only)	15932	514-M, 514-MZ	
Chassis end		1 way	7628
514-M, 514-MZ (Strap)	17634	4 way	8022
718-C Left Hand	22648	5 way	15926
Right Hand	22647	718-C	
Dial Scale		2 way	8863
514-M	20288	3 way	8821
514-MZ	22518 or 23305	5 way	15926
718-C	22629 or 23316	Vibrator Power Unit	
Dial Frame Assembly		514-M, 514-MZ	20420
514-MZ	22669	718-C	19190
718-C	20343C	Terminal Aerial	17717

MODEL 514-M — CIRCUIT CODE.



Code No. Description

INDUCTORS.

Code No.	Description	Part No.
L1	Filter Unit	9382
L2, L3	Aerial Coil 1600-540 Kc/s	7647A
L4, L5	Oscillator Coil 1600-540 Kc/s	7638
L6, L7	1st I.F. Transformer	17646
L8, L9	2nd I.F. Transformer	17646
L10	R.F. Choke	13809
L11	R.F. Choke	3149
L12	Low Tension Filter Choke	19155

RESISTORS

Code No.	Description	Part No.
R1	0.1 megohm 1/2 watt	C1
R2	2000 ohms 1/2 watt	C2
R3	3.2 megohms 1 watt	C3
R4	1.6 megohms 1/2 watt	C4
R5	10,000 ohms 1/2 watt	C5
R6	0.5 megohm Volume Control (with switch)	C6
R7	10 megohms 1 watt	C7
R8	1 megohm 1/2 watt	C8
R9	3.2 megohms 1 watt	C9
R10	1.6 megohms 1/2 watt	C10
R11	1000 ohms 1/2 watt	C11
R12	500 ohms 1/2 watt	
R13	Not used	
R14	25 ohms 1 watt	

CAPACITORS.

Code No.	Description	Part No.
C1	50 uF mica	C12
C2	4 uF mica	C13
C3	12-430 uF tuning	C14
C4	3-25 uF trimmer (on gang)	C15
C5	0.05 uF paper 200 v	C16
C6	0.05 uF paper 200 v	C17
C7	working	C18
C8	3-25 uF trimmer (on gang)	C19
C9	0.05 uF paper 200 v	C20
C10	0.025 uF paper 400 V	C21
C11	0.0025 uF paper 600 V	C22
	working	C23
	working	C24

Code No.	Description	Part No.
C12	70 uF mica	C25
C13	70 uF mica	C26
C14	70 uF mica	C27
C15	50 uF mica	C28
C16	200 uF mica	
C17	0.025 uF paper 400 V	
C18	0.1 uF paper 200 V	
C19	0.05 uF paper 200 V	
C20	0.025 uF paper 400 V	
C21	0.0025 uF paper 600 V	
C22	20 uF 200 P.C. Electrolytic	
C23	20 uF 200 P.V. Electrolytic	
C24	0.4 uF paper 200 V	

Code No.	Description	Part No.
C25	0.1 uF paper 200 V	
C26	0.02 uF paper 600 V	
C27	0.02 uF paper 600 V	
C28	0.4 uF paper 200 V	
C29	400 uF 12 P.V. Electrolytic	
C30	400 uF 12 P.V. Electrolytic	

TRANSFORMERS.

Code No.	Description	Part No.
T1	Vibrator Transformer	17568
T2	Loudspeaker Transformer	XA8

LOUDSPEAKER.

Code No.	Description	Part No.
FI	3 Amp. Cartridge	AC32